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The Trend of Wheat Production in Ohio

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THE TREND OF WHEAT PRODUCTION IN OHIO

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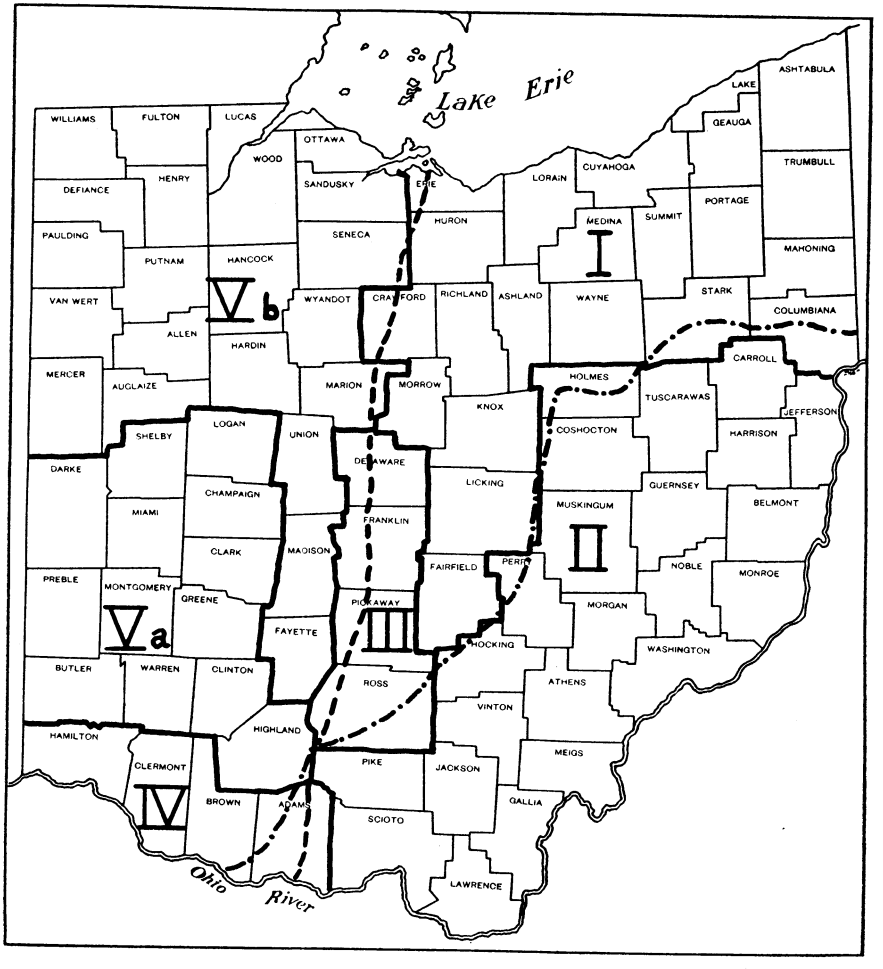
Beginning in 1850, Township Assessors in Ohio were required to collect statistics of crop production. Wheat was well established in parts of the State previous to this time; so, a study of the avail-



— — — — LIMESTONE — SANDSTONE-SHALE BOUNDARY.

—·—·—·— GLACIAL BOUNDARY.

Fig. 1.—Map of Ohio showing wheat districts and soil boundaries

able figures gives quite an interesting picture of the effects of later settlement, depletion of soil fertility, and the development of the Great Plains on the crop in Ohio. Furthermore, it gives an idea of basic, long time trends. It seems worthwhile, therefore, to analyze critically the data now available for a period of 80 years.

Wheat acreage and yields alone cannot give a true picture of the development or importance of the crop. The proportion of the land in wheat is very significant, and, therefore, the total area of improved land in farms is included for this study.

The State is too large, soil conditions are too diverse, and the period of development in different sections is too variable to permit analysis as a single unit. Divisions have, therefore, been made, based on all three of these considerations. Bayfield (1) zoned the State into five parts for his environmental studies on wheat. His districts have been used in this study, except that District V has been further subdivided. Figure 1 shows the main soil areas and the boundaries of the six districts.

SOILS

The soils of District I are primarily from glacial sandstone and shale. There is a narrow strip of lacustrine soils along Lake Erie and a limited non-glaciated area in Stark and Columbiana Counties. Both of these areas are relatively unimportant in wheat production. The topography of the District as a whole is undulating to gently rolling. The gently rolling land is more generally used for wheat.

In District II residual sandstone and shale soils are found almost exclusively. This is typically rolling hill country of moderate to low fertility. The best wheat lands are found on those terraces which are seldom subject to flooding. The western and northern parts of the district are not as hilly as the south and southeast sections, especially the areas along the Ohio River. There is very little level plateau as the streams have cut nearly the whole country into valleys with narrow ridge tops. The glacial boundary is not sharply defined in all cases, and there are areas where glaciated valleys extend some miles into the territory. These provide, probably, the most extensive areas of fairly level land in the District.

District III is a transitional zone. The boundary between the limestone and the sandstone-shale areas passes through every county. District III cannot properly be grouped with either District I or V and is segregated so that the data will not unduly influence those of another district. The topography is generally level to gently rolling.

District IV includes the only extensive area of Illinoian Drift in the State. The soils are derived from limestone but are so weathered that they are distinctly acid. In all but Hamilton County drainage conditions are poor, except close to the Ohio River. Hamilton County is more cut up by streams and has, therefore, more bottom land and generally is better drained. Adams County properly belongs by itself; but it does fit in fairly well with District IV as far as the wheat crop is concerned and is included with it to avoid complication through increasing the number of districts.

The soils of District V (a) originated from the Early Wisconsin and, in the northern part, from the Late Wisconsin glaciations. This is predominantly a silt loam area, and the light-colored soils are generally somewhat acid, especially in the southern counties. The topography is fairly level to gently rolling.

District V (b) includes heavier soils from the later phases of the Late Wisconsin glaciation and also a considerable area of lacustrine clays, clay loams, and silt loams. The Lake Plain area includes most of Paulding, Defiance, Fulton, Henry, Putnam, Wood, Lucas, Ottawa, and Sandusky Counties. The soil type over the whole area is predominantly silty clay loam or heavier. The topography is level to gently rolling.

Soil difference was not the most important basis for the subdivision of District V. The section segregated as V (a) was settled and was an important wheat area by 1850; whereas V (b) was the last part of the State to be occupied and developed much later. Union, Madison, and Fayette Counties were settled early but developed slowly; wheat growing came late in their agricultural history, coinciding with the counties to the north. This slow development of wheat was probably due to lack of adequate drainage in the early years, resulting in very severe winter injury and consequent unpopularity of the crop.

DATA

The data upon which this survey is based are presented in Table 1. The various statistics have been summarized for 10-year periods by Districts. The presentation of more detailed data does not seem necessary for this study, although reference will be made to specific county figures when these show a marked deviation from the district average.

The data are largely from the statistics collected by the Crop Reporting Service of the State. With regard to the reliability of these figures, Doctor Thorne (2) makes the following statement:

"As these statistics were obtained at the time that the assessor was collecting information upon which to base taxation, ...very many farmers have imagined that the crop statistics also were

TABLE 1.—Wheat Data for Ohio, 1850-1929

District	Period	Total improved land in farms	Average acreage harvested	Improved land in wheat	Average production	Average yield per acre
		Acres		*Per cent*	*Bushels*	*Bushels*
I	1850-1859	.....	396,104	.....	5,050,612	12.8
	1860-1869	.....	353,323	.....	4,374,130	12.4
	1870-1879	.....	427,862	.....	6,359,455	14.9
	1880-1889	5,190,147	607,365	11.7	9,389,933	15.5
	1890-1899	4,974,214	566,487	11.4	8,958,709	15.8
	1900-1909	4,716,378	477,736	10.1	7,873,184	16.5
	1910-1919	4,707,551	486,858	10.3	8,928,309	18.3
	1920-1929	4,378,646	532,470	12.2	8,592,360	16.1
II	1850-1859	.....	513,994	.....	5,574,152	10.8
	1860-1869	.....	385,643	.....	3,488,404	9.0
	1870-1879	.....	379,254	.....	3,989,971	10.5
	1880-1889	4,773,259	445,907	9.3	5,121,342	11.5
	1890-1899	4,690,812	432,785	9.2	5,524,884	12.8
	1900-1909	4,945,341	310,543	6.3	3,853,072	12.4
	1910-1919	4,663,050	305,002	6.5	4,515,956	14.8
	1920-1929	4,358,996	272,560	6.3	3,524,478	12.9
III	1850-1859	.....	82,941	.....	1,060,532	12.8
	1860-1869	.....	94,914	.....	1,004,676	10.6
	1870-1879	.....	108,262	.....	1,397,434	12.9
	1880-1889	1,030,689	170,213	16.5	2,177,913	12.8
	1890-1899	1,040,637	164,931	15.8	2,282,802	13.8
	1900-1909	1,073,298	141,569	13.2	1,970,176	13.9
	1910-1919	1,082,877	163,250	15.1	2,919,208	17.9
	1920-1929	1,052,480	151,380	14.4	2,233,270	14.8
IV	1850-1859	.....	87,367	.....	1,002,880	11.5
	1860-1869	.....	84,010	.....	751,612	8.9
	1870-1879	.....	65,361	.....	623,379	9.5
	1880-1889	835,820	74,556	8.9	727,654	9.8
	1890-1899	817,600	92,279	11.3	978,908	10.6
	1900-1909	871,874	63,563	7.3	745,845	11.7
	1910-1919	862,534	59,427	6.9	804,530	13.5
	1920-1929	848,777	51,910	6.1	627,450	12.1
V (a)	1850-1859	.....	351,046	.....	4,870,547	13.9
	1860-1869	.....	417,818	.....	5,163,872	12.4
	1870-1879	.....	413,016	.....	5,472,030	13.2
	1880-1889	2,708,403	560,198	20.7	7,707,736	13.8
	1890-1899	2,805,531	564,773	20.1	8,502,053	15.1
	1900-1909	3,011,114	466,893	15.5	6,723,350	14.4
	1910-1919	3,047,989	389,368	12.8	6,715,183	17.2
	1920-1929	3,002,880	389,340	13.0	6,296,900	16.2
V (b)	1850-1859	.....	193,950	.....	2,356,930	12.2
	1860-1869	.....	309,623	.....	3,665,718	11.8
	1870-1879	.....	427,016	.....	6,424,176	15.0
	1880-1889	3,543,709	673,984	19.0	9,622,185	14.3
	1890-1899	4,010,126	690,147	17.2	10,670,493	15.5
	1900-1909	4,626,867	516,943	11.2	7,715,089	14.9
	1910-1919	4,866,683	430,628	8.8	8,640,411	20.1
	1920-1929	4,900,572	534,540	10.9	9,663,395	18.1
State	1850-1859	.....	1,625,402	.....	19,915,653	12.3
	1860-1869	.....	1,645,331	.....	18,448,412	11.2
	1870-1879	.....	1,820,771	.....	24,266,445	13.3
	1880-1889	18,082,027	2,532,223	14.0	34,746,763	13.7
	1890-1899	18,338,920	2,511,402	13.7	36,917,849	14.7
	1900-1909	19,244,872	1,977,247	10.3	28,880,716	14.6
	1910-1919	19,230,684	1,834,533	9.5	32,523,597	17.7
	1920-1929	18,542,351	1,932,200	10.4	30,937,853	16.0

being collected for taxation purposes. The consequence has been that the recorded crop yields have been generally lower than the yields actually obtained . . . . . This point does not affect the comparisons between different sections of the State nor between different periods . . . . . the record as a whole must be accepted as presenting a picture of the course of agriculture in Ohio of incomputable value."

The total improved land in farms was obtained from the U. S. Census figures, and, in each case, the area reported is that for the first year of the decade; e. g., the area for the period 1880-1889 is that given in the 1880 census. This undoubtedly introduces some error, but the changes have been gradual (with the possible exception of District V (b)), and it was felt that trends were quite clearly defined. A more reliable figure would probably have been the average of the 1880 and 1890 figures for the decade 1880-1889. Since, however, the 1930 census gives no figure comparable with the improved land in farms as reported in previous census data, this would throw the 1920-1929 period out of line.

Figures for acreage, yield, and yield per acre for the 88 counties up to 1909 were taken from Ohio Bulletin 326 (2). For the last 20 years, the data were compiled by the author. The finally corrected statistics were not available at the time this compilation was made, and, therefore, the figures do not agree absolutely with those to be published elsewhere. This was not considered a serious factor, since the only purpose was to show the general trends in wheat production. The best figures available cannot be absolutely accurate, and the preliminary estimates, not corrected to the Federal Census, were used in the belief that they would show the general trends quite as accurately as any to appear later.

IMPROVED LAND IN FARMS

First, consider the total improved land in farms. These data are presented graphically for the six districts in Figure 2. Under this heading is included ". . . . . all land regularly tilled or mowed, land in pasture which has been cleared or tilled, land lying fallow, land in gardens, orchards, vineyards, and nurseries, and land occupied by farm buildings." Data were not available previous to the 1880 census.

In District I there has been a continuous but irregular decrease in the cultivated area. From an analysis of the individual county figures, it is seen that the decrease has been quite marked along the Lake shore and also in Huron, Medina, Summit, and Portage Coun-

ties. Trumbull and Mahoning Counties showed the greatest decrease of all, although Columbiana County also sustained a considerable loss over the 40 years. On the other hand, in Crawford and Fairfield Counties, acreages increased rather steadily with slight losses now and again. Wayne County showed a considerable increase from 1880 to 1890, with little subsequent change. The remaining counties showed but minor fluctuations.

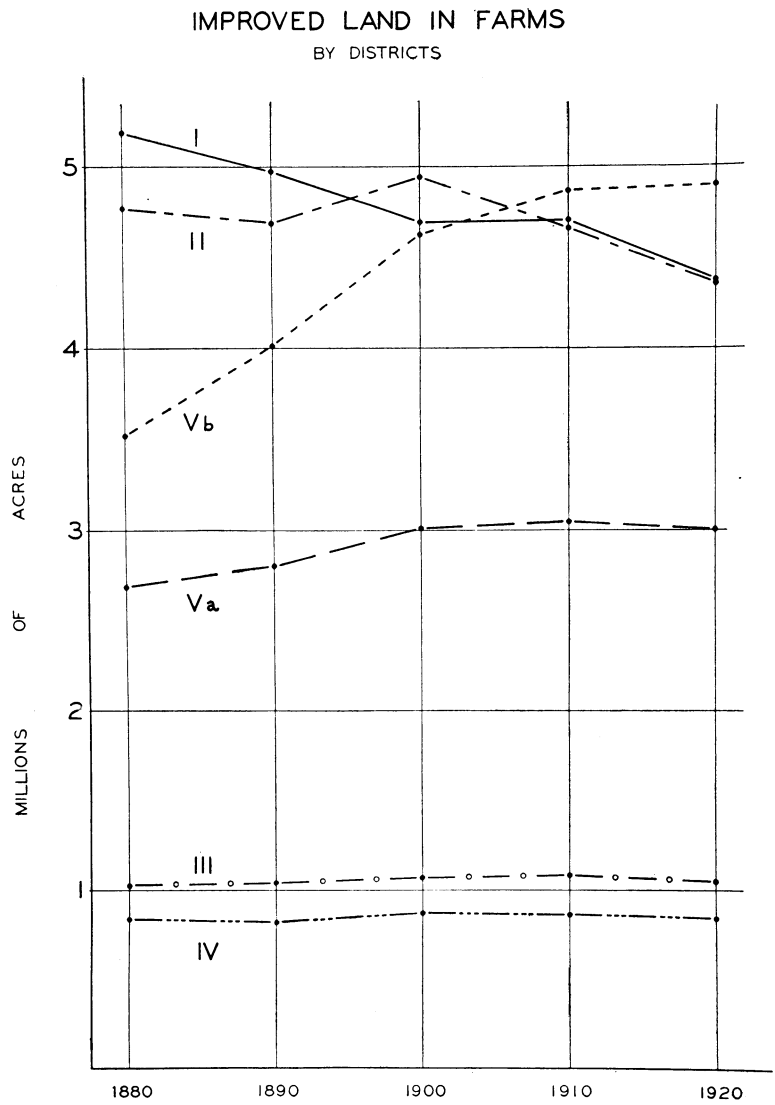


Fig. 2.—Improved land in farms in Ohio, by districts, 1880-1920

The general trend for District I then, as shown by the graph, is due to the abandonment of farm lands or to their transfer into woodlot. In Cuyahoga County and, to a lesser extent, in a number of other counties, the decrease can be largely accounted for by the rapid growth of industrial cities and their suburbs. The marked decrease in Trumbull and Mahoning Counties is, in large measure, due to the abandonment of heavy soils with impervious subsoils, which, after a few crops are removed, become almost impossible to cultivate economically.

In District II, there was a general decrease of the improved land in farms. There is, however, a marked increase in 1900 over 1890. This is true of almost every county in the group, and the explanation is not easy to find. Ruinously low prices for farm products prevailed in Ohio from about 1885 to 1900. This would tend to depress the acreage cropped in 1890. Again, many small wheat farmers had gone west during the period 1850-1860, their land being bought up by cattle "barons" and turned into grazing farms. This would tend to build up the fertility in the area. The number of cattle decreased quite sharply between the eighties and the nineties, and apparently the old farms were once again put into crop, giving the notable increase of cropped land found in 1900—a time when the prospects for profitable crop production were brighter than at any time during the two previous decades. Disappointment evidently followed, and much of the land proved unprofitable as a crop-farming proposition, since we find the only sharp decrease in improved land in farm in Ohio between 1900 and 1910 in District II. This decrease occurred in spite of the fact that the cattle population continued to fall off markedly.

Southeastern Ohio undoubtedly contains much marginal and submarginal land. This fact accounts for the gradual decrease in improved land in farms since 1900 and is probably also the underlying reason for various inconsistencies between the data of this section and that of other districts in the State.

The total area of District III is small, and the trend does not show on the graph as clearly as it might. On the whole, there have been only minor changes in the area of improved land in farms from 1880 to 1920. Ross County reached a maximum acreage in 1900; Franklin showed a general trend upward, except in the last decade; Pickaway is still increasing its area; Delaware has shown little change. This group of counties is relatively unimportant for the purposes of this study as it is not a clear cut district. The western half of each county really belongs with District V (b) and the east-

ern half with District I or II. It is, however, quite an important wheat area. In nearly all respects the data are intermediate between those of counties to the east and west, bearing out the idea that this is a transitional zone.

District IV is also small but quite distinct from the rest of the State. The decrease in improved land in farms in Hamilton County is largely due to the growth of Cincinnati and its suburbs. Clermont County shows little change from 1880 to 1920; whereas Brown County figures show an upward trend. Adams County showed a steady increase to 1910, with a slight falling off to 1920. Taken as a whole, the district has just about maintained its cultivated acreage over the 40 years.

District V (a) showed a steady increase in improved land in farms up to 1900, since which time it has just about maintained this acreage. Butler County has shown a steady but slow decrease throughout the period considered, and, in addition, Logan, Miami, Clark, Preble, Montgomery, Greene, and Warren Counties have shown slight decreases during the last decade. These latter may or may not be significant. This is one of the old established sections of Ohio, and the relatively small changes noted are criteria of its excellence as a farming area.

District V (b) is the only area in Ohio developed since 1850. Seneca, Marion, and Madison are the only counties showing early decreases in improved land, and, with the exception of Lucas and Ottawa Counties, there has been no later marked reduction. The growth of the city of Toledo has had a marked effect in Lucas County. Ottawa apparently follows the trend of the other Lake shore counties to the east.

This district is well adapted to crop production, and its late development was due to transportation and drainage problems.

CHANGES IN WHEAT ACREAGE

Nowhere in Ohio is continuous wheat culture practiced, nor has such a system ever been important in the State. Wheat, then, is grown in rotation. The advantages of the crop are many. It helps distribute labor, as it is sown in the fall and is harvested before spring-sown grains. Because of its relatively stiff straw and early harvest, it makes an ideal nurse crop for seeding down to clovers, grasses, or alfalfa. It has proven also a reliable cash crop in most years, being distinctly more profitable than spring grains for this purpose. When prices are low, other grains may be substituted,

but the small reduction of acreage at the present time is evident proof of the difficulty of finding a satisfactory substitute for wheat in the rotation.

There are, of course, minor fluctuations in the wheat acreage planted each year, and winter injury, which is such a variable factor, causes still further differences in acreage harvested. These factors, however, do not affect 10-year averages very seriously as they tend to compensate. The basic factors which cause changes in acreage are price of wheat, price of possible substitutes (usually spring grains), change in rotation (as for example, from 4 to 5 years), or a change in the agricultural system arising from growth of cities, introduction of new crops, etc. The effects of these various factors on wheat acreage harvested are shown graphically in Figure 3.

In District I we have the best of the "old wheat belt" of the State, which included the so-called backbone counties—Stark, Wayne, Holmes,[1] Ashland, and Richland—where wheat was a popular crop long before 1850. From the fifties to the sixties we find some reduction in acreage, probably partially due to the depression following the Civil War. The main factor, however, was a period of extremely low yields during the middle sixties. Nevertheless, the loss of acreage was more than regained in the seventies as Ohio approached the 20-year period, 1880-1900, during which wheat reached its maximum in the State as a whole. The crop from the Western Plains area did not affect the price seriously until about 1885. From this time until 1900, Ohio farmers received very low returns for their crops. However, the introduction of machinery and the premium received due to nearness to market allowed the farmer to produce wheat at a profit, and, with the rapidly increasing population, wheat production reached very high figures.

District I being an older and well settled section showed the greatest decrease in wheat acreage from the eighties to the nineties. Another drop followed to the first decade of this century, but since that time the acreage has been gradually increasing again. This, in some measure at least, is due to the good prices received during and for some years after the war period. The present low prices are not apparently causing the reduction in acreage that might be expected, probably because the prices of all farm products are down and there is nothing better to grow.

[1]One of the backbone counties but included in District II in this study.

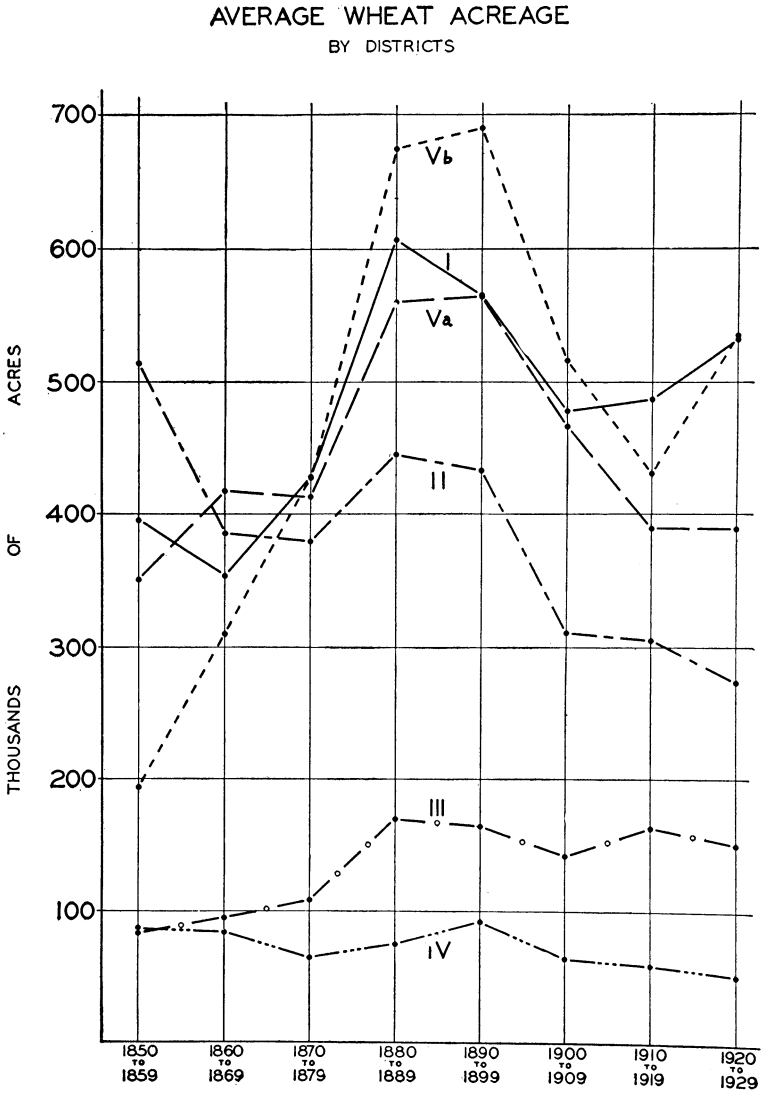


Fig. 3.—Acreage of wheat harvested in Ohio, by districts, 1850-1929

In District II we find a marked decrease of the acreage in wheat in the sixties, due to the factors mentioned in the discussion of District I. The increases to the eighties and nineties, however, are not nearly as marked. This is largely because machinery could not be easily adapted to the small hilly farms and hand harvested grain

could not compete. As mentioned before, this district contains much marginal land and, for this reason, has been the first to suffer in many economic reactions.

The "old wheat belt" extended from the backbone counties mentioned in the discussion of District I south to Belmont and Morgan Counties. The southern part of this area suffers rather severely from winter injury to wheat, and this fact, coupled with poorer soils and irregular topography, has led to a gradual abandonment of wheat as a main crop in the rotation. The southern counties of District II never produced large yields per acre, and after the pioneer period in their history, wheat has shown a tendency to decrease fairly consistently, with some arrest in the fall during the decade 1880-1890. The northern counties, with the exception of Holmes, showed a considerable increase in wheat acreage for the eighties and nineties but a marked falling off since that time.

In District III the increased acreage of the eighties and nineties was again largely due to the introduction of machinery. Wheat has held its own in this district very well since the first of the century.

In District IV wheat held its own to 1900; since then the acreage has been gradually decreasing. Hamilton County is probably best adapted to the crop, but the area in this county is small, due to the large city within its boundaries, and is constantly becoming less. This district is not and should not be an important wheat area.

District V (a) has been important as a wheat center since about 1850. At this early date it was developing quite rapidly. The severe check to agriculture in the sixties did not stop a marked increase of wheat acreage in this area in that decade; however, there was a reaction in the seventies which kept the acreage about constant. In the eighties and nineties the maximum was reached, and since that time there has been a rather sharp decline, except that equilibrium seems to have been reached during the last decade. The wheat acreage decreased largely as the result of a change in the cropping system (the adoption of longer rotations and the use of more spring grains). Even so, District V (a) remains one of the most important wheat sections in Ohio.

District V (b) was new land in 1850, with the exception of Union, Madison, Fayette, Seneca, and Marion Counties. Wheat acreage increased enormously between the fifties and the eighties. A maximum was reached in the nineties, followed by a sharp decline for 20 years. This decrease in acreage followed that of the rest of the State and was doubtless accentuated by the change from a

pioneer type of agriculture, in which wheat held a prominent place, to a more permanent form, where a fairly definite rotation has been adopted. Also, in northwestern Ohio is found probably the best oat and barley sections in the State, and these crops have undoubtedly supplanted some wheat. In very few counties, however, will oats outyield wheat in feed units per acre, assuming one bushel of wheat equivalent to 2 bushels of oats and in no case, at average prices, is oats superior as a cash crop. An equilibrium does not appear to have been reached, since there was a considerable increase in wheat acreage for the last decade reported.

PER CENT IMPROVED LAND IN WHEAT

Probably one of the most significant measures of the place wheat holds in Ohio agriculture is the percentage of the improved land in farms that is devoted to the crop. This was calculated from the total improved land in farms and the wheat acreage harvested, and it is shown graphically in Figure 4.

In District I there was a gradual drop from the eighties to the end of the century. From that time on there has been a gradual increase again, until the last figure shows actually a higher percentage of improved land in wheat than ever before in the history of these counties. This is not all due to the fact that individual farmers are growing more acres of wheat. It will be remembered that the total improved land in farms has been decreasing and that this decrease has been most evident along Lake Erie and in the eastern counties. Further, the greatest concentration of wheat was in Richland, Ashland, Wayne, and Stark Counties. Assuming little or no change in the wheat acreage of these backbone counties, the percentage of improved land in wheat for the district as a whole would rise as farm lands devoted to other crops were abandoned, taken up by cities, or otherwise eliminated. Since, in addition, the actual wheat acreage is also increasing, the individual farmer actually must be sowing more wheat than before.

The fact remains that, in District I as a unit, a larger share of the cultivated land is devoted to wheat than ever before; consequently, wheat is increasing in importance in the area. In those counties where the cultivated acreage has been falling off, the land remaining in use for crop production is of course the better agricultural soil, which, in turn, is best adapted to wheat.

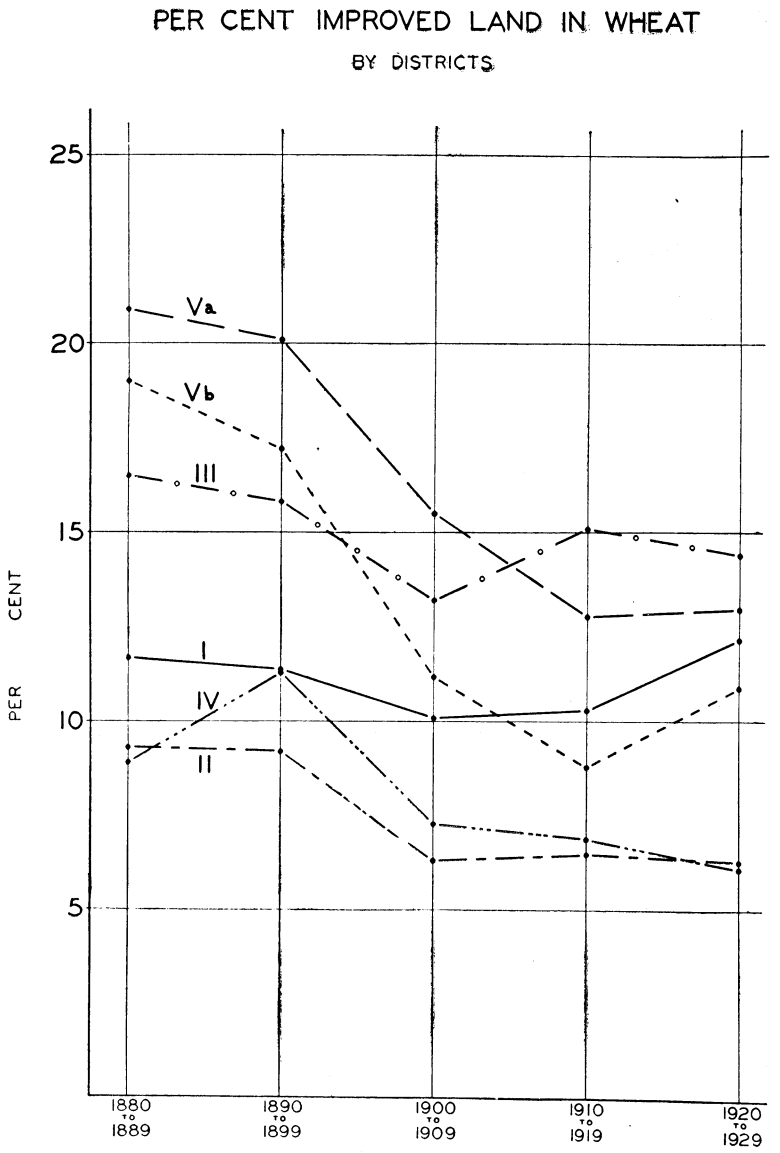


Fig. 4.—Per cent of improved land in wheat in Ohio, by districts, 1880-1929

In District II we find a consistently low percentage of the improved land in wheat. There was a very marked drop at the end of the century, since which time wheat has occupied only 6 per cent to 7 per cent of the cultivated land. Thus, the wheat crop has

remained of about the same importance in this district from 1900 to the present time, approximately one acre in each 16 in crop being devoted to it. The hilly topography and small fields make the use of machinery difficult and expensive. Wheat is less important here than in any other district, not only because of the factors mentioned above but also because of very low yields. On the terrace lands wheat may continue to occupy an important place, but on the uplands the system of agriculture will change, possibly to a grazing proposition, and the crop will largely cease to be grown.

In District III the percentage of improved land in wheat decreased to the end of the century, then rose to about 15 per cent, and showed a slight decrease again in the last decade. This district has given the highest figure in the State during the last 20 years, approximately one acre in every 7 in crop being wheat. This is the one respect in which the area does not appear to be transitional. Actually, it so happens that the whole area is well suited to winter wheat, but, if we compare it with just the backbone counties of District I, then it lies intermediate between this section and District V (a).

District IV gives but low wheat yields, and much of the best of the area is occupied by Cincinnati and its suburbs. The result is the lowest percentage of improved land in wheat in the State. Wheat has a very small place here, again probably largely on the terrace soils.

District V (a) has shown a steady decline in percentage of improved land in wheat until the last decade, when it is remaining fairly constant. The crop occupies about one acre in each 8 in crop. This is the second highest figure in the State, exceeding that of District I by 1.5 per cent to 2 per cent. Yields have been fairly good, and the crop has been grown a long time. The agricultural system is well established, and wheat has taken a prominent place.

In District V (b) the wheat acreage fell off rapidly from the nineties until the last decade, when it showed a sharp increase. The percentage of improved land in wheat followed the same general trend. Wheat was quite important during the eighties and nineties, but in the first decade of this century the acreage fell below 9 per cent of the total improved land. There is evident, however, a strong upward trend, and probably wheat will increase in importance in this district.

YIELD PER ACRE

Yield is of course one of the prime requisites for any crop. These data for wheat in Ohio from 1850 to 1929 are presented graphically in Figure 5. There is considerable variation between districts in this important factor. In general, there is a progressive decrease in yield per acre from west to east and also from north to south. This is particularly well defined and uniform in the last two decades, with but few minor deviations from the general trend. Figure 6 gives the yield per acre by counties for the period 1920-1929 and shows this very clearly. The highest yields occurred in District V (b) and the lowest in the extreme south and southeast counties. Earlier in the history of the State, the yields in District I exceeded those in V (b), probably due to the pioneer conditions then existing in northwestern Ohio.

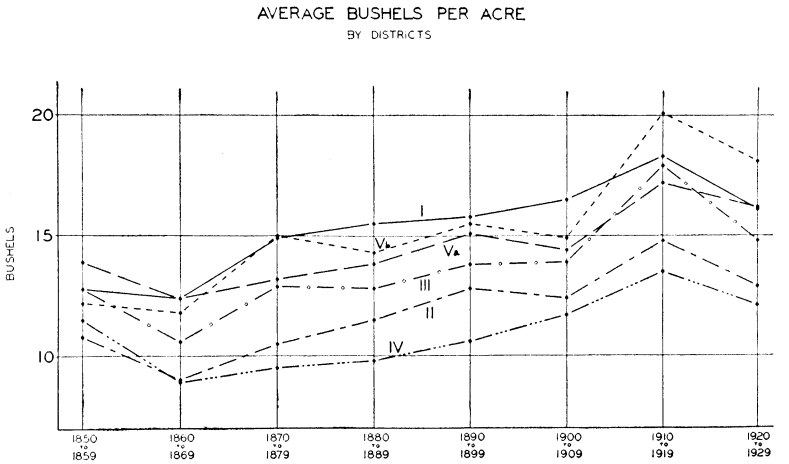


Fig. 5.—Average yield per acre of wheat in Ohio, by districts, 1850-1929

District II has remained consistently below District I in yield per acre and maintains its margin over the yields in District IV on account of the higher yields in the northern counties of the group. The yields are so low in south and southeastern Ohio that it is questionable whether the crop is profitable at average prices.

The yield per acre has varied considerably from decade to decade, but fluctuations have been largely state wide in extent. Considering the State as a unit for this part of the discussion, we find two major exceptions to an otherwise gradual increase. The

first of these occurred in the decade of the sixties when yields were abnormally low. The principal factor here was a series of years when conditions were adverse; in 1864, 1865, and 1866 yields were extremely poor, the state average for 1866 being only 4.5 bushels per acre. The yields in the seventies were better and were exceptionally good from 1877 to 1880. This did much to stimulate increased planting. Due to the introduction of the binder, the more intelligent use of fertilizers, and the good yields obtained, wheat remained a very important crop despite the low prices (not once from 1882 to 1903 did the Ohio farmer get $1.00 for his wheat).

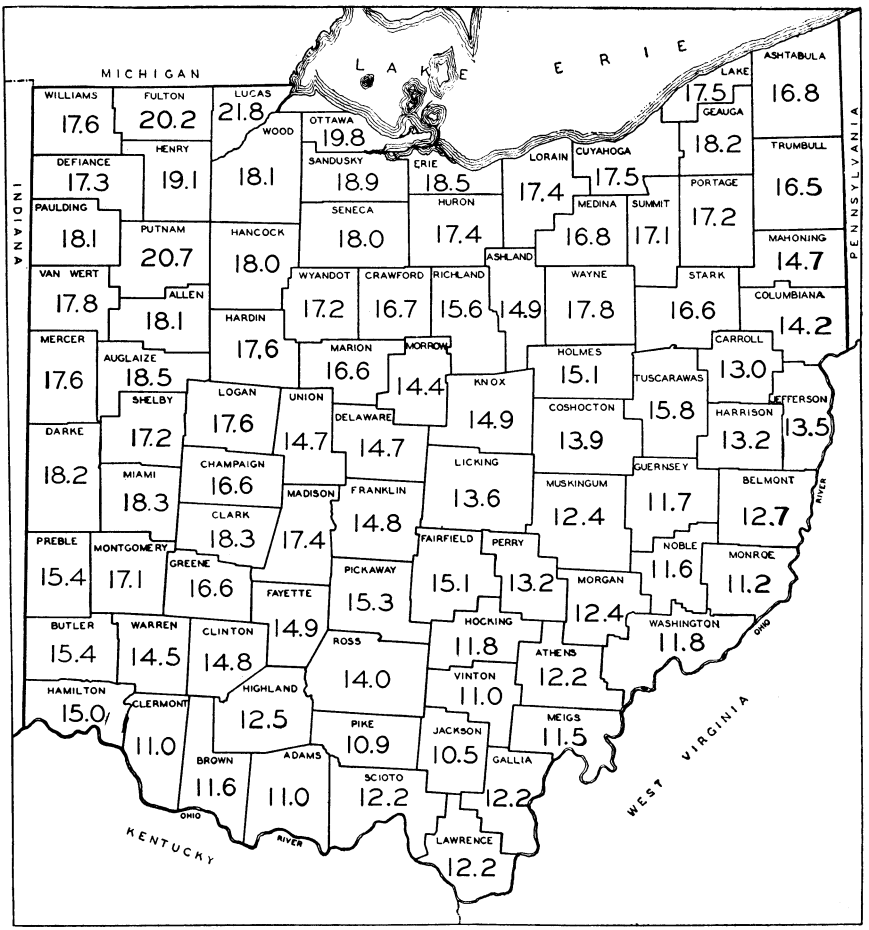


Fig. 6.—Average yield per acre of wheat in Ohio, by counties, 1920-1929

The second marked break in the yield curves comes in the decade 1910-1919 when Ohio enjoyed the highest acre yields of wheat in its history. This was, in part, due to new and better varieties and, also in part, to the greatly increased use of fertilizers. However, the principal factor involved was a number of very favorable seasons, especially 1913, 1914, 1917, 1918, and 1919. Wheat in 1912 was almost a complete failure in many parts of the State, but, since the acreage harvested was comparatively small, it had only a slight effect on the 10-year average yield per acre.

The yields for the last decade fall in line again with the gradual increase, due to better farming methods and to the introduction of better adapted and higher yielding varieties.

FUTURE OF WHEAT IN OHIO

Why does Ohio continue to produce wheat in competition with the West? The reasons are not difficult to find. In the first place, Ohio farmers can produce good crops of this cereal and, at normal prices, show a profit. Secondly, winter wheat fits into the rotations used exceptionally well. Thirdly, Ohio produces an excellent quality of soft red winter wheat, particularly adapted to the biscuit, pastry, and breakfast food trades. Finally, there is located in the State a number of large mills that specialize in flour from soft red winter wheat, thus providing a market close at home. Of course, not all Ohio wheat goes to local mills, considerable being exported to other states, but the home market is a factor of great importance in fixing the price to the farmer.

Ohio is not the only state producing soft red winter wheat, but the area included in Ohio, Indiana, and southern Michigan produces approximately half the wheat of this grade in the United States. Southeastern Pennsylvania, Virginia, Maryland, North Carolina, and eastern Tennessee form a second area; western Illinois, Missouri, and eastern and southeastern Kansas make up the third major district. A small area in eastern Washington practically completes the picture.

Ohio does not have direct competition with the Great Plains area, as soft red winter wheats are not grown there. There seems no reason to suppose that wheat will not remain the second most important crop of this State, and, indeed, it may easily increase in importance, if prices should advance comparatively to competing crops or if yields should be increased by the introduction of better varieties or better cultural methods.

What will be the trend of Ohio wheat production during the next decade? No one can say positively. World conditions as regards this crop will have a marked effect; nevertheless, wheat is bound to remain important. The crop is excellently adapted in District I and should hold its own there. In District II the acreage will likely continue to decrease, especially in the south and southeastern parts. Throughout Districts III and V the most serious problem is winter injury. A variety which would withstand cold and heaving damage better would mean much to this large area, especially to the middle and midwestern counties.

District V (a) is well established and has adopted a rather definite agricultural system. The wheat acreage will not likely fluctuate easily for this reason, and wheat will remain important unless continued very low prices prevail. In District V (b), on the other hand, the agricultural system is not nearly as firmly established and, consequently, changes can occur much more readily. However, since this district obtains the highest yields in the State and since land values are not abnormally high, wheat should take a prominent place in years to come, unless prices remain very low.

As long as there is a demand for soft red winter wheat and as long as farmers produce this type to the practical exclusion of others, the prospects for the crop seem good. The pastry, biscuit, and breakfast food trades are showing a steady increase in volume of business, so that the market seems pretty well assured. Price to the farmer is the prime factor that will govern the extent to which wheat will be grown, and world production sets the basic price level. Prospects are uncertain, but many wheat areas should be forced out of production by low prices before Ohio, because of the higher farm price that the grower in this State receives.

Altogether, the prospects for the wheat crop in Ohio, in the opinion of the writer, are not as poor as some would have us believe. Wheat prices have been ruinously low before, and the crop has maintained itself in spite of this and other adverse conditions. The present depression is admittedly severe, but wheat is not much more adversely affected than other important crops, and the world surplus of wheat is not so great that return to normal prices must be indefinitely postponed.

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